

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re patent application of

Confirmation No.: 4379

M. TORRES et al.

Serial No.: 10/517,386

Examiner: Tarazano, Donald Lawrence

Filing Date: June 3, 2005

Group Art Unit: 1794

For: NON-WOVEN FABRIC

Commissioner of Patents

PO Box 1450

Alexandria, Virginia 22313-1450

**DECLARATION UNDER 37 C.F.R. 1.132**

Sir:

Professor Paul Luckham declares as follows:

1. I have reviewed the office action dated May 26, 2009 and the advisory action dated November 2, 2009 in the above-identified application, as well as the Laurent reference relied upon by the Examiner.

2. I am a co-inventor of the above-identified application. I hold a BSc. in Chemistry from the University of Bristol and a PhD in Physical Chemistry also from the University of Bristol. The research for my doctorate was in the area of heteroflocculation of colloidal particles. I worked as a research associate in the Cavendish Laboratory, at Cambridge University from 1981 to 1983. I have been employed by Imperial College London since 1983, holding positions as a Lecturer in Colloid Science and Biotechnology, Chemical Engineering Department, from 1983 to 1992, as a reader in Particle Technology, Chemical Engineering Department, from 1992 to 1996, finally being appointed Professor in Particle Technology in the Chemical Engineering Department in 1997. My principle area of research is to try to control the bulk properties of suspensions by controlling the interactions between the particles in a suspension. In 2003, I established Fabrican Ltd. as a start-up company with Dr Manel Torres, who is a co-inventor on the present Application. Fabrican Ltd. is focused on the research and development of spray-on fabric which can then be used across a number of market sectors, including the Fashion & Design, Medicine, Hygiene and Automotive industries. I currently also hold the position of Scientific Director with Fabrican Ltd.

3. As to compositions for forming a fabric by spraying onto a supporting surface, a person of "ordinary" skill in the art has education and practical experience of about the following level: a degree in chemistry or another physical science, and about 5 years experience as a formulation scientist. Examples of positions held by such a person of "ordinary" skill in the art include, for example, a formulation scientist. Examples of where such a person of "ordinary" skill in the art would work include, for example, coatings or papermaking industry.

4. In the office action, the Examiner has correctly admitted that "Laurent fails to teach using diluents other than water" (office action at page 3). At the time of

the invention of this application, a person of ordinary skill in the art reading Laurent *et al.* did not pay special attention to the diluent, water, in Laurent *et al.* That a commercial process uses water generally is not considered remarkable or in need of changing without a compelling reason, because water is the cheapest reagent available and non-toxic.

5. In Laurent *et al.*, the boiling point of the diluent (water) is not taught as being significant.

6. A person of ordinary skill in the art reading Laurent would have found the use of water completely unremarkable, and not a reagent to be avoided.

7. The Examiner's theory that a person of ordinary skill in the art would have reasoned to substitute something else (especially methanol or ethanol) for water in Laurent is incorrect and not how such a person would have thought. To begin with, water is in much more plentiful supply than methanol or ethanol and thus much, much cheaper. Secondly, water is recognized as being a much 'greener' solvent than the lower molecular weight alcohols mentioned by the Examiner and with the ever-increasing emphasis on green technology in the world which was already in chemical scientists' minds at the time of the presently claimed invention, no real-world scientist would arbitrarily substitute water with a much less green solvent such as methanol or ethanol. For example, ethanol is a severe fire hazard and requires specialized storage conditions and precautions; further ethanol is an irritant and described as having toxic effects such that workers must wear goggles, gloves and such.

8. There has been a strong trend in the chemical arts in recent decades oppositely than the Examiner hypothesizes, namely, to replace processes using disfavoured reagents with acceptable substitute processes avoiding the disfavoured chemical. Thus the composition of present Claim 1 is counterintuitive to a person of ordinary skill in the art reading Laurent, and is in essentially an opposite direction than how such a person would have naturally and logically thought.

9. In the advisory action, the Examiner states that "applicants argue that the use of organic solvents are not 'green' etc... but this clearly shows that people understand the use of solvents and substituting them for one another." However, the Examiner's hypothesis of substituting-out water and substituting-in a toxic or more costly reagent is arbitrary and opposite how a person of ordinary skill in the art actually thinks about solvent substitution, because such a person would not arbitrarily complicate or add expense to his process, and to the person of ordinary skill in the art, the use of water in Laurent would seem perfectly fine and not calling for change.

10. Laurent *et al.* do not teach the formation of a non-woven fabric, nor do they teach or even suggest that the composition may form a non-woven fabric by spraying onto a supporting surface. In fact, Laurent *et al.* teach little about the application of the formulation. Laurent *et al.* disclose a water-based composition comprising mud fibers and cellulose (fibers), methylcellulose (binder) and water (diluent), in which the binder is dissolved and the fibers are dispersed - see Example 1 of Laurent *et al.* The water-based composition of Example 1 is used in Examples 2-6 as a fibrous binder in which other fibrous materials and components are

suspended. The resultant compositions are used as decorative coverings. The water-based compositions are liquid in phase and are applied to a surface using a paint roller or a low pressure gun (see Page 3 of the machine English translation). The reason a paint roller or a low pressure gun is used to apply the compositions of Laurent *et al.* is because these compositions are liquid, paint-like compositions and must be applied in such a manner so that they will adhere to the surface to which they are applied.

I further declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the above-referenced application and any patent issuing thereon.

Date 11/12/09

Paul Luckham

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